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SOURCE Eisenwerk Witkowitz (Vitkovice Iron Works), Moravska Ostrava 10, Czechoslovakia. (Information requested.)

THE VITKOVICE IRON WORKS

The small puddling works, founded by the Archbishop of Olmütz in the village of Vitkovice in 1828, has developed over the decades into one of the greatest iron works in the world.

Today the Vitkovice enterprise represents a vertical trust which is almost completely independent economically. Its production begins with the mining of coal and ore and covers all phases of production to the finished mechanical product. The production basis of the Vitkovice Works is formed, on the one hand, by the coal mines and the coking plants of the corporation, which are capable of producing several millions of tons of coal and coke per year, and on the other by the ore pits owned by the corporation in Slovakia and Sweden. (Photograph of ore pit in Slovakia, CIA Photo Accession No 3056.)

At present the Vitkovice Works employs approximately 35,000 men in its mines and mills.

Careful selection of raw materials to be used, modern equipment, and long-employed, well-trained personnel provide the formula for manufacture of quality products. During the entire course of production, intermediate and end products are subjected to all known tests for quality. Experienced engineers are constantly trying to improve production methods and the quality of products.

The Vitkovice Works has agencies in all important commercial centers of the world.

The Vitkovice Works is comprised of the following:

Two coke-oven plants with a production capacity of over one million tons of coke per year.

Five blast furnaces with a production capacity of 800,000 tons of pig iron per year (CIA Photo Accession No 3057).

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Two steel mills with a combined production capacity of 850,000 tons of crude steel per year.

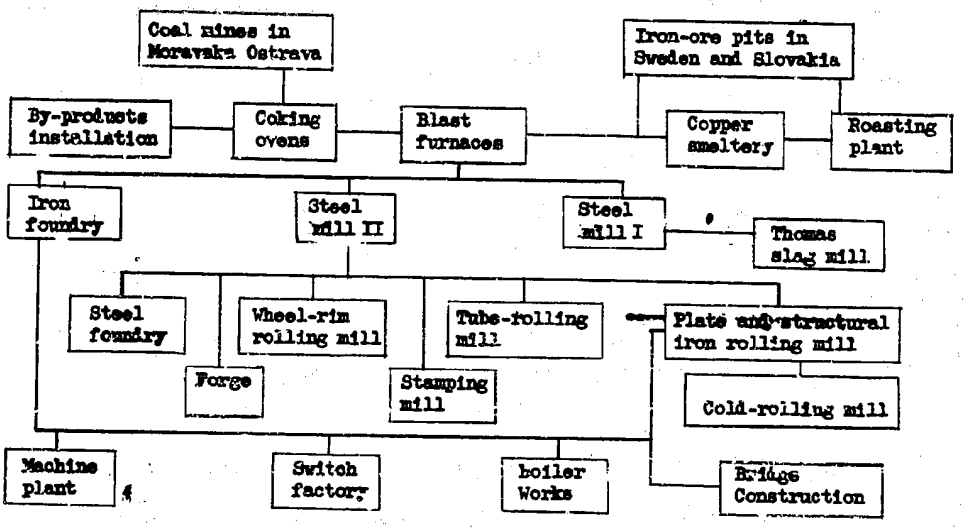
Rolling mills for production of steel sheets, armor plate, and structural steels of all sorts; also, a cold-rooling mill. Total production capacity, is 650,000 tons per year.

A foundry for casting steel, with forging departments, a hammer mill, a die shop, and finishing shops.

A tube-rolling mill with a capacity of 100,000 tons of seamless and welded pipes per year.

These main divisions are supplemented by the following departments: cast iron foundry, bridge-building department, engineering works, switch-manufacturing plant, boiler works, screw factory, central welding shop, fire-clay factory, various operations in the preparation of by-products, Thomas slag mill, benzene plant, copper smeltery, an electrical power plant with a total capacity of 500,000 kilowatt-hours per day, a plant railroad with about 145 kilometers of track, and a fleet of barges for transporting Swedish ore over the Oder River. (General views of Vitkovice Iron Works, CIA Photo Accession No 3053 and No 3054.)

Organization of the Vitkovice Iron Works as a Vertical Combine.



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Production Program of the Blast Furnaces

Crude cast irons: crude cast irons I, II, and III; hard cast irons; gray and white cast irons; crude cast iron for rolling; hematite crude iron.

Crude irons for the manufacture of steel.

Iron alloys: specular iron, ferrosilicon, ferromanganese.

By-products: cinders, stone and paving materials, smeltery pumice, ferrovanadium.

Iron Foundry

The iron foundry is comprised of 12 cupola furnaces, 3 annealing furnaces, 28 pouring machines, and 37 hoists of 1- to 50-ton capacity.

Products:

Gray-iron castings; sand-mold and loam-mold castings up to 100,000 kilograms in weight in any design required. Castings of heat-resistant iron. Pipes for steam, gas, and water mains down to 1,200 millimeter internal diameter. Distilling boilers, retorts, melting crucibles for chemical plants, annealing pots, etc. Machine parts and other castings requiring great thickness or strength, or both characteristics combined. Cylinders, press plungers, brake shoes, cylinders and castings for paper machinery, calenders for rubber factories, rollers for rolling mills, columns, and anvil blocks.

Hard castings: rollers of all types and sizes for rolling mills, smooth or corrugated, highly finished and polished; dies for presses, and rollers for structural-steel-straightening machines.

(For photograph of the iron foundry, see CIA Photo Accession No 3050.)

Steel Mills

These consist of the following: one steel mill equipped with two open-hearth furnaces of 65-tons capacity each, two tilting furnaces of 130-tons and 180-tons capacity each, and four tilting furnaces of 250-tons capacity each (Talbot System); a cast-steel mill, comprised of three open-hearth furnaces of 15-35-tons capacity; and four electric furnaces of 1- to 30-tons capacity.

Products: ingots of open-hearth steel and special steels of all qualities and compositions up to a unit weight of 220,000 kilograms.

Rolling Mills

These consist of 20 electrically driven roller-trains for structural irons of all sorts, sheets, and armor plates; finishing shops; and a lathe shop for making rollers.

Our patented sheet-annealing furnace, of most modern construction, deserves special mention; it is 17 meters long and 4,200 millimeters wide.

Products: rolled articles of basic open-hearth steel; ingots, slabs, billets, plate slabs, strips for pipe manufacturing, material for seamless pipes, 50- to 500-millimeter girders; channel irons and various structural irons; bar iron, flat bar iron, hoop iron (as for cotton bales); standard-gauge, narrow-gauge, and trolley tracks; fishplates, washers, clamping plates, ties for standard- and narrow-gauge railroad; steel sheet piling. Plates of average and large thickness in all qualities from 2 millimeters' thickness upward and to 4.3 millimeters wide; ribbed plates; black sheet.

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Cold-Rolling Mill

This department consists of 36 rolling stands of the most modern design.

Products: cold-rolled hoop iron with parallel-cut or rolled edges of basic open-hearth steel of the finest quality, from the softest to the hardest, suitable for various uses, especially for sheathing cable, packing, reinforcement of boxes, cigarette cases, buttons, nozzles, tubing (for airplanes, bicycles, baby coaches), toys, pens, razor blades, etc.

Cast-Steel Works and Forges

This department consists of a formert-steel casting works, steel foundry, forge, wheel-rim rolling mill, finishing shops for armor plates, and extensive finishing shops for forgings and steel castings.

Products: formed-steel castings for open-hearth steel, electrosteel, or manganese-steel in all sizes and weightsup to 90,000 kilograms per unit.

For general machine construction: castings for the construction of rolling mills: base plates, frames, roll housings, rollers, various transmission parts, flywheels for electrically driven rolling mills, etc; various parts for mine installations; steel castingsfor steam engines, hydraulic presses, steam hammers, etc; cast-steel pipes for steam and water mains; parts for power transmission plants; superheated steam valve housings.

Steel castings for ship construction: cutwaters and rudder posts, rudders, tail shaft brackets.

For locomotive construction: locomotive and tender pipes of ignot iron (Flusseisen), wheel spiders of all dimensions, journal boxes, crossheads, locomotive frames, etc. Steel castings for dynamos, motors, and turbines, as: housings, housing covers, gear wheels, rims, etc. Steel castings with great wear-resisting qualities, as: frog points and double frogs, pit and worm-gear wheels, various parts for mills, grinding machines, machines for brickyards, dredgers, etc. Shaped-steel castings of special steels and alloys with especially great toughness and high rigidity for various purposes.

Steel castingsfor bridge construction, as foundation plates, etc.; (Glühdeckel), equipment for chemical plants, oil refineries, etc.

Forgings up to 80,000-kilograms weight per part, of basic open-hearth steel or special steels with additions of nickel, chromium, etc., for all purposes, particularly for locomotive and railroad car production, automobile production, dynamos and electric motors, steam turbines, hydraulic hammers, hydraulic presses, power transmission plants, ship construction, bridge construction, rolling mills, seamless forged high-pressure cylinders, and compressed-air chambers for torpedoes.

Tube-Rolling Mill

This department consists of a Mannesmann rolling mill, a Stiefel rolling mill, and autogenous, electrical, and water-gas welding shops.

Products: seamless-drawn and butt-welded pipes: gas, water, and steam pipes to one-inch internal diameter, butt welded, from one-eight inch upward, seamless-drawn, black, striated, asphalted, or galvanized; smooth, expanded, or constricted tubes to 16-inches external diameter (406 millimeters) for boilers, locomotives, anchor tubes (Ankerrohre). Seamless-bore pipes for oil drilling, oil lines, pipes of API specifications and all other specifications; long, seamless steel socket pipes, asphalted and jute-covered, treated with a special bituminous solution, covered with woolen felt, etc. Pipes for superheating, coils for all purposes, pipes for steam heating, high-pressure hot-water heating

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pipes. Towers for electrical illumination and power transmission and for telephone, telegraph, signal installations. Precision, steel, seamless tubing for the production of furniture, bicycles, automobiles, and airplanes. A complete line of water, air, and steam pipes. Pipe bends, collars and flanges of all kinds.

Welded Tubing and Welded Tubing Material

(a) Water-gas welded: smooth tubing of 12 13/16-inches internal diameter (325 millimeters) upward, oil well bore pipes of 16 inches external diameter (406 millimeters) upward, produced from grade A materials. Flanged pipes from 12 13/16-inches internal diameter (325 millimeters) upward for every pressure and use, with prewelded collars and loose flanges or with prewelded flanges. Steel socket pipes of 12 13/16-inches (325 millimeters) internal diameter upward. High-pressure tubing of all sorts for power installations, steam boiler equipment, fireboxes, and steam domes. Flanged and smooth fire tubes, domes, steam fittings, steam collectors, separators, fireboxes, tanks and cylinders for gas and compressed air, wood cookers, retorts for chemical plants, evaporating pans and zinc-foundry pans. Corregated tubing for the Fox, Deighton, and Morison boiler systems.

(b) Autogenously and electrically welded tubing: precision-welded tubing for the production of furniture, bicycles, automobiles, and airplanes.

Boiler Works

The boiler works is comprised of the boiler work shops, the pressing plant, the welding shop, and the screw and rivet factory.

Products: boilers, tanks, gasometers, and other steel-plate structures: steam boilers of all sorts, high-capacity water-tube boilers up to the greatest heating surfaces, Garbe system boilers with inclined tubes, Löffler system high-pressure boilers, for which we possess the license for the entire world. Waste-heat boilers for gas engines and open-hearth furnaces; mechanical traveling-grate firing, for normal and for undergrate blast, Walther-Witkowitz system. Mechanical chain grates. Economizers of standard construction and according to the "AEG" patent. Fireboxes, super heaters, firing for all fuels, feed water preheaters, Rotator air preheating systems, etc. Tanks for water, alcohol, crude oil, petroleum, tar, gasoline, molasses, etc., up to the greatest dimensions; grain silos, smokestack-shaped storage installations (Kaminreservoire); cellulose cookers, reduced-pressure distilling installations, smeltery installations, as blast-heating apparatuses, generators, gas lines, gas purifiers, etc.; equipment for cement factories (crushing drums, rotary furnace tubes, etc.); steel-plate smokestacks (self-supporting or anchored with guy wires); riveted or water-gas welded pipe lines for every purpose; equipment for oil refineries, tar distilleries, chemical plants, breweries, etc. Coal and ash transporting installations; pipe lines for steam engines and boiler installations.

Pressing Plant

Flat and rounded boiler heads with or without indented openings, inner and outer head plates, special heads for single flue boilers, Yarrow boiler heads. Garbe boiler plate systems. Sectional chambers and cross-boxes for Babcock and Willcox systems; boilers, bogies, coke-oven doors, mine cars, cradles for tank cars (Sättel für Zisternenwagen), stamped parts for motor ploughs, automobile wheels. (Photograph of 7,000-ton hydraulic press, CIA Photo Accession No 3051.)

Welding Shop

Drums, tanks, boiler-shell rings, and steel structures, welded autogenously or electrically; steel street gratings (Stahlstrassenroste).

Screw Factory

Rivets, screws nuts of all kinds.

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Löffler High-Pressure Boilers

The following Löffler boilers are either in operation or are under construction: four boilers at the Caroline Shaft at Moravska Ostrava, two boilers of 40-50 tons per hour and two boilers of 60-75 tons per hour capacity; two boilers of 130-150 tons per hour each at the Thermotechnical Institute in Moscow; four boilers of 35-45 tons per hour at the I. G. Farbenindustrie in Höchst, Germany; two boilers of 50-60 tons per hour at the I. G. Farbenindustrie in Leverkusen, Germany; one ship's boiler of 20-23 tons per hour for the ship Conte Rosso of the Lloyd Triestino Line, Italy; four boilers of 60-70 tons per hour each at Brimsdown, London; three boilers of 60-70 tons per hour in Holeschowitz, Prague; five boilers of 65-80 tons per hour in Strzebowitz; three boilers of 35-40 tons per hour for Japan; and one boiler of 65 tons per hour for France. (Photograph of Löfflerboiler installation, CIA Photo Accession No 3052; View of the Caroline shaft, CIA Photo Accession No 3053.)

Vertical Tube Boilers

During the past 10 years, 47 vertical-tube boiler fittings, representing a total heating surface of 44,835 square meters, have been shipped to Russia. The following vertical-tube boilers of our design are either in operation or under construction in England: seven boilers of about 60 tons per hour each for the Bristol Electric Power Plant; six boilersof about 85 tons per hour for the electric power plant in Sheffield; eight boilers of about 61 tons per hour for the electric power plant in Yorkshire.

Bridge-Building Department

Products: steel structures. Highway and railroad bridges of all designs to the greatest dimensions; conveying bridges, footbridges. Steel skeletons for buildings of all kinds. Coal and ore-milling installations; blast-furnace structures; chutes. Airplane hangars; radio transmission masts; power transmission towers; weir installations; crane installations of various sorts; reservoir equipment.

Machine Factory

Products: various installations and machines, particularly for mining and smelting works. (Photograph of main floor, CIA Photo Accession No. 3058.)

(a) Mining equipment: steam, electrical, or compressed-air-driven conveyors or winches; flywheels; compressed-air, electrical, or Diesel-driven mine locomotives; mine ventilators; rock-cutting machines and compressed-air tools; compressed-air or electrically driven conveyors of shaking-chute installations; belts, etc. Complete ore-dressing and separation installations; coal-washing installations; agglomerating installations; braking inclines.

(b) Coking plant and by-product equipment: coke separators; coking, charging, and ramming machines; leveling machines, door unhinging devices (Türaushebevorrichtungen); coke-quenching cars and coke-coke conveying cars (Koksruchentführungswagen); equipment for benzene plants, gas works.

(c) Blast-furnace equipment: gas blowers, blast-furnace hoists, charging equipment, blast-furnace fittings, blast connections, valves for hot and cold blast, taphole guns, hot-blast fittings, casting ladles, slag ladles and cars, gas-cleaning equipment.

(d) Installations for steel and rolling mills: ingot, plate, and bar-rolling mills for rolling steel and other metals; tube-rolling mills, cold-rolling mills, hydraulic presses, accumulators and pumps, roller beds, drawing benches, shears, saws, straightening machines, cranes, hydraulic and compressed-air hoists, traveling cranes, conveyor devices, charging devices.

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(e) Equipment for the chemical and paper industries: filtering and calcining installations, mixing vats, agitators, pumps, autoclaves, hydraulic presses, compressors, drying installations, cooling cylinders, vacuum and distilling equipment, cylindrical rotary kilns, slide dampers (Schieber), calenders, vulcanizing drums and presses, pan grinders, machines for the production of paper.

(f) Equipment for cement factories, quarries, and the construction industry: rotary kilns, cement mills, steel balls for crushers, rolling mills, ball mills, tube mills, jaw breakers and rotary crushers, disintegrators, fixed and portable crushing and separating units, compressed-air tools, rock drills, compressors with building machinery, road rollers, vertical and horizontal Diesel engines, mobile conveyors.

(g) Specialties: gears, cog wheels, and pinions.

Deep-Boring Corporation, "TAG", Formerly Fauck-Schenk

Products: drilling machines of all kinds: "rotary" systems, cable-drilling systems. Pennsylvania drilling systems.

Hand-operated drills for drilling sites and checking at lesser depths. Drilling equipment is available for loan and drilling jobs are done on contract.

Railroad Equipment

Products:

(a) Wheel sets: wheels and pairs of wheels for all kinds of locomotives, tenders, railroad cars, trolley cars, etc; wheel spiders of cast or forged steel; cast-steel spoke-wheels, wheel rims for locomotives, tenders, and railroad cars; straight axles of special open-hearth Ni-Cr-Mo steel; grease cups for axles and crossheads; locomotive frames.

(b) Equipment for the permanent way: tracks, flange rails for standard-gauge track, channel rails for trolley cars, Wechsel [illegible], switches, etc. Frogs of manganese-steel castings and frogs for railroad and streetcar lines. Small pieces: clamping plates, fishplates, saddle bottoms, clips, track bolts, track screws, metal ties, turntables, traveling platforms for railroads and streetcar lines.

(c) Miscellaneous: special automatic-unloading cars for mine railroads, dump cars, etc; special cogwheel axles for motor vehicles; towers for streetcar overhead lines and telegraph lines.

Firebrick Factory

Products: firebricks for boilers; special bricks for coal-dust fueling; firebricks for the bottoms, hearths, boshes, and shafts of blast furnaces and hot-blast ovens; firebricks and silica bricks for open-hearth furnaces, electric furnaces, Bessemer converters, cupola furnaces and generators, tapholeplugs, opening and ladle linings. All kinds of pipes for communication (Kommunizierrohr), casting. Firebricks for smelting and annealing furnaces. Silica bricks and firebricks for coke ovens and gas furnaces. Firebricks and silica bricks for the glass industry, especially floating bricks, etc, and special, particularly fire-resistant bricks. Firebricks and silica mortars, designed for the various qualities of our bricks. Quartz, clay, and firebrick dust.

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